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IDENTIFYING CRITERIA AND ESTABLISHING PARAMETERS FOR FOREST-BASED ECOTOURISM IN NORTHERN ONTARIO, CANADA

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INTRODUCTION

Within the overall context of tourism, the ecotourism sector has reported the greatest growth over the past decade. Although ecotourism implies a type of tourism that fosters environmentally responsible principles, it appears that the economic benefits that can accrue from this activity have encouraged many nations to deliberately promote this concept within their borders. Established ecotourism destination areas are focused predominantly in the developing nations (de Groot 1983, Dearden 1989, Boo 1990, Fennell and Eagles 1990). The magnitude of the ecotourism industry is well illustrated by the reality that over \$25 billion is transferred annually from the northern to the southern hemisphere (Whelan 1991). Recently, the growth in ecotourism has been broadened to include new destination areas in Australasia (Valentine 1992) and the remote landscapes of the polar regions (Marsh 1992). Expansion has also resulted in opportunities being sought in the less exotic, temperate landscapes of the developed world, such as northern Ontario, Canada. This latter trend has emerged in response to the potential that ecotourism may offer for the economies of marginal areas, and a realization that there may be a declining number of new, exotic, and rare landscapes available that can be marketed as ecotourism destination areas in the more established regions.

Early ecotourism destinations like Kenya (Olinda 1991), the Galapagos Islands (Kennington 1989), and Thailand (Dearden and Harron 1992) have suffered extensive impacts as a result of increased numbers of visitors. Therefore, it is

imperative that only suitable areas be developed and that ecotourism criteria be matched with the resource base characteristics of the region. This paper describes a methodology for identifying sites based first on determining the criteria and attributes of ecotourism and, second, by matching the value range of these criteria to the region's resource base inventory. Problems in defining ecotourism, and identifying linkages between this and other forms of tourism and related environmental management concepts, are discussed in the context of explaining difficulties in selecting appropriate ecotourism criteria. Elements of ecotourism suitable to northern Ontario are also presented along with the criteria and methodology. A final section addresses implications of the methodology to resource managers and tourism operators.

DEFINITION AND LINKAGES

Ecotourism has been fraught with problems of definition. There is no unifying and generally accepted definition for this concept and many terms have been used to describe the same phenomenon. Examples include nature travel (Laarman and Durst 1987), nature-oriented tourism (Durst and Ingram 1988), and special interest tourism (Inskeep 1987, Weiler and Hall 1992). Scace et al. (1992) identifies over 35 terms that may be linked to ecotourism, such as sustainable tourism and alternative tourism. The dangers inherent in allowing definitions of ecotourism to have such a broad scope is that the term can fall prey to indiscriminate use as a catchall phrase for almost anything that links tourism with nature (Farrell and Runyan 1991).

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Although there is no universally accepted definition, the one most commonly cited is that stated by Hector Ceballos-Lascurain, who first coined the term "ecotourism" a decade ago. He defines ecotourism as "traveling to relatively undisturbed or uncontaminated natural areas with the specific objective of studying, admiring, and enjoying the scenery and its wild plants and animals, as well as any existing cultural manifestations (both past and present) found in these areas" (Ceballos-Lascurain 1987, *in* Boo 1990). His definition suggests a form of tourism that is little different in effect from much of what has traditionally been regarded as wilderness recreation in North America. It says nothing about resource degradation, nothing about having positive impacts on the flora or fauna, nothing about economic impacts or benefits on local communities, and nothing about the nature of the experience or satisfaction. These ideological and value-laden attributes have been added to subsequent definitions of ecotourism and have served to obscure rather than define its meaning. Abuse of the term, often for marketing purposes, has watered down its conciseness.

As such, it is necessary to view ecotourism as a dynamic and flexible concept that is prone to change given the various settings in which it occurs (e.g., coastal regions, forested landscapes, national parks and protected areas, wildlife reserves, private land) and the range of experience sought by those traveling to such varied landscapes. To understand ecotourism, an adaptive approach is needed; no one definition is suitable for all settings and certain elements will have greater value than others.

Ecotourism has been linked to many other types of tourism (e.g., sustainable tourism, alternative tourism) and ideas related to environmental management (e.g., sustainable development). There is some similarity between ecotourism and adventure travel; the latter often implying or involving a higher degree of risk and possible environmental impact. Ecotourism can also be viewed as fitting within what may be termed a sustainable development framework, addressing principles (e.g., equity, carrying capacity, conservation), planning (e.g., proactive, integrative, and long-term), and management (e.g., integrative, assigned responsibility). These linkages are discussed in greater detail elsewhere.¹

In the context of northern Ontario, ecotourism will be fashioned by a predominantly forested setting with the presence of other resource-related activities impacting at the ecosystem level. As such, ecotourism within this region may be defined as "a responsible nature travel experience, which contributes to the conservation of the ecosystem while respecting the integrity of host communities and, where possible, ensuring that activities are complementary, or at least compatible, with existing resource-based uses present at the ecosystem level".²

NORTHERN ONTARIO AS A SETTING FOR ECOTOURISM

A review of the literature suggests that the ecotourism population is, for the most part, well educated, affluent, and mature. It would also appear to be sympathetic to what may be termed "green" principles, essentially those of sustainable development; small rather than large scale; traditional rather than modern resource development; nonconsumptive rather than consumptive use of wildlife, except by indigenous peoples; and especially in the areas they are visiting for ecotourism, protection rather than exploitation of resources and landscape features. The ecotourism population is also primarily urban in origin and is attracted to areas that epitomize the opposite to home environment. These beliefs and attitudes, while held at varying strengths, may work against a perception of northern Ontario as an area suitable for ecotourism to the global market, and certainly for the visitors from Canada and North America who have some knowledge of this region and its resource development history.

In many respects, northern Ontario appears to have a number of the attributes needed for the successful development of ecotourism. It is largely free from urban settlements and has vast expanses of apparently untouched landscape, a rich vegetation cover, considerable wildlife, and an indigenous population that has traditionally lived off the land. As well, there has been recreational and tourism use of the area for a considerable time. Thus, some basic facilities and infrastructure already exist. Finally, a number of provincial parks, waterway parks, and one national park have been established. These further the recreational-tourism presence and help to safeguard some of the natural features.

However, it should be readily apparent to a careful observer that ecotourism in northern Ontario will have to be somewhat different from that found in Latin America, Africa, or Asia. While this region does have many attributes, in reality a number of these factors create difficulties as well as presenting opportunities for the development of ecotourism. These are discussed briefly here so as to provide a background against which the identification of potential ecotourism sites can be conducted.

The urban settlement that exists in northern Ontario holds few attractions for the potential ecotourist. Resource developments in the region, principally forestry (and pulp/paper production), mining, and trapping/hunting, are not viewed as attractive activities, or in extreme cases even as acceptable, by some ecotourists. Clear-cutting of forestland, for example, is generally not viewed with sympathy by the ecotourism population. As with other traditional resource activities in northern Ontario, fur trapping, even when practiced by indigenous peoples, does not rank high in attraction with

¹ Boyd, S.W.; Butler, R.W. 1993. Review of the development of ecotourism with respect to identifying criteria for ecotourism for northern Ontario. Forestry Canada, Ontario Region, Sault Ste. Marie, ON. Unpublished File Report No. 5. 54 p.

² Ibid.

ecotourists. Portrayal of the historic importance and development of this activity should be of interest, but present day trapping is probably a feature to avoid in the context of ecotourism.

The recreational mix that presently occurs in northern Ontario lends itself well to ecotourism. In fact, much of the region's recreation could perhaps be defined as ecotourism. Major exceptions are sport hunting and sport fishing, which contribute significantly to tourism revenue in the region. Hunting and fishing by indigenous peoples are viewed by some ecotourists as acceptable within certain limits.

In many other regions that currently serve the ecotourism market the indigenous population is portrayed and utilized as a major visitor attraction. These people serve as guides, provide accommodation in traditional houses and villages, and create and sell native products. Above all, indigenous people are "sold" as primitive, exotic, different, and desirable; however inaccurate, biased, or racist that may be. In general, such a portrayal of northern Ontario Indian band members would be unacceptable, inaccurate, and possibly conflict with the province's legal system. In any case, most Indian reserves and settlements in the region do not have the exotic appeal of a Thai hill tribe village. Often, they are not significantly different from other small, northern, urban communities.

The physical attributes and scale of the northern Ontario landscape make the area a prime candidate for ecotourism, but lead at the same time to problems of access and seasonality. Distance between features and attractions may be vast at times, certainly when compared to some tropical ecotourism destinations. Similarly, the region does not exhibit the dramatic variety of landscapes characteristic of countries such as Costa Rica. The flora and fauna of northern Ontario lacks the variety, guaranteed visibility, and accessibility commonplace in many other areas currently used for ecotourism.

These points have been noted, not to discredit the appeal of northern Ontario for ecotourism, but to clarify some of the issues that must be faced. Forms of ecotourism already exist in this region and undoubtedly these can be further developed. What is important, however, is to note that ecotourism in this area will, by necessity, be different in many aspects from that found in more exotic locations. The characteristics of northern Ontario, in sympathy with the needs and preferences of the local population, must be carefully matched to the attributes and demands of ecotourism.

ELEMENTS AND CRITERIA OF ECOTOURISM SUITABLE FOR NORTHERN ONTARIO

Seven key attributes are suggested as having applicability, based on the literature and past experience. Ecotourism should be: (1) environmentally and socially responsible, (2) focused on elements of the natural environment,

(3) managed in such a way as to have minimal environmental and social impacts, (4) nonconsumptive, (5) capable of providing desired economic benefits to local residents, (6) compatible with other resource uses in the area, and (7) appropriate in scale for local conditions and the environment. A more detailed discussion of these attributes is provided by Boyd and Butler.³

When defining indicators of ecotourism suitability for northern Ontario, one major concern should be the naturalness or pristine quality of the area under consideration. For that purpose, some recently developed ecological concepts, such as "ecosystem health" or "ecological integrity" (see Regier 1993) may be helpful. These notions are useful in attempts to operationalize ecosystem management or sustainable resource management. To achieve this, consideration must focus upon: (1) underlying scientific assumptions and cultural biases, (2) the context of application, (3) methodological biases, and (4) actual measures used (Steedman and Haider 1993). All of these descriptions of ecosystem integrity point to the fact that it is a relative concept. First of all, constant changes in the natural environment make it impossible to define a correct starting point from a historic perspective. Also, few areas remain that have not been impacted directly or indirectly by human activity, but a number of sites may exist in rather natural states, suggesting a continuum from pristine to more and more developed or altered environments. More important for resource management is the fact that several stable states can be defined along that continuum. The challenge for sustainable resource management in general, and ecotourism in particular, is to devise strategies for maintaining such an ecologically stable state while at the same time permitting tourism use in the area.

It can be argued that few pristine environments exist in northern Ontario. The region has been heavily forested, resource extraction is widespread, and the pervading influence of pollutants, emissions, and possible man-induced climatic change affects even those areas that have not been exposed to extractive activities. With respect to the area's naturalness, the forest environment and the aquatic environment are significant in terms of ecological integrity. Both are important also for tourism uses, albeit in rather different ways, depending on the type of activity. For instance, in the case of land-based activities, users/ecotourists may move through the forest and consequently can be confronted with numerous detailed forest characteristics. Aquatic areas often provide important backdrops, mostly in the form of scenery, but subtle changes in quality may be of somewhat lesser significance. The situation is reversed on the other hand for water-based activities. Here the forest merely provides a scenic backdrop for the ecotourism experience. The importance of this observation is that regardless of whether emphasis is placed on the forest or on the aquatic environment, the integrity of the desired setting will be much more apparent. This allows the other setting to be managed to reflect a healthier appearance. Although naturalness is considered a key criterion to the identification of ecotourism sites, wildlife, cultural heritage, landscape, and community are also

³ Ibid.

suitable indicators. Table 1 lists characteristics and measures of the above mentioned criteria. Variation is expressed as absolutes or in the form of a continuum.

METHODOLOGY

Geographical Information System (GIS) technology is employed in developing a three-stage methodology to identify ecotourism sites. Stage one identifies those features of each criteria that can be recorded using a GIS. Elements within a region can be recorded as points (e.g., mills, mines), polygons (e.g., areas of clear-cut forest), or as lines (e.g., rivers, logging roads). Distance components involved with criteria are accommodated by placing buffers of a certain distance around features. For example, where noise may be a consideration and deterrent to ecotourism, a specific buffer (e.g., 10 kilometers) is placed around current extractive activities.

The second stage focuses on determining an area's naturalness. Natural, as used here, refers to a present landscape

that has adjusted to human interaction and modification. Given that this interaction with and modification of the landscape will vary spatially, it is also argued that there are different degrees of naturalness. An area's degree of naturalness is expressed in terms of the following seven attributes: (1) presence or absence of permanent settlement, (2) biophysical (vegetation) characteristics, (3) extent of resource-related activity present, (4) type of access, (5) presence of wildlife, (6) nature of recreational activity, and (7) landscape characteristics. An assumption is made here that the naturalness type found in areas is an important factor in determining what sites are best suited to different types of ecotourists and ecotourism experiences.

The methodology proposed in this stage is related to that used in similar research undertaken in Australia on the production of a national wilderness inventory, and on wilderness evaluation (Lesslie and Taylor 1985, Lesslie et al. 1988, Lesslie et al. 1993). A value range, from which an overall score can be determined, is assigned to the various aspects of each attribute. Table 2 shows an itemized list of possible

Table 1. Characteristics and measures of ecotourism criteria.

| Characteristics | | Measures | |
|--|----------------------------------|----------|-------------------------------------|
| <u>Naturalness</u> | | | |
| Permanent settlement in area | Absent | | Present |
| Absence of cutting | > 10% red/white pine | | >80% deciduous |
| Undrained wetlands | Absence of dams | | Dams |
| Unmodified rivers (1) | Absence of dams | | Dams |
| Unmodified rivers (2) | Absence of bridges | | Bridges |
| Absence of intrusive sound | 10 km to near sound | | 1 km |
| <u>Wildlife</u> | | | |
| Suitable habitat | ARDA 1 capability | | ARDA 7 capability |
| Migration route | On primary routeway | | Not on routeway |
| Wintering site | Yes | | No evidence |
| Feeding site | Yes | | No evidence |
| Nature reserve zone | Nature reserve provincial park | | Nature reserve zone provincial park |
| <u>Cultural heritage</u> | | | |
| Designated historic sites | Yes | | None |
| Historic parks | Historical provincial park | | Historical zone provincial park |
| Historical routes | Present | | Absent |
| Indian reserve | Traditional desired | | Modern not desired |
| <u>Landscape</u> | | | |
| Significant feature | High relative relief >100 meters | | No relief |
| Viewpoints | Present | | Absent |
| <u>Community</u> | | | |
| Not within site, but close enough to provide base services and local population for economic benefit | 5 km | | Over 20 km |
| Close enough for primary access to site(s) | Access features | | No access features |

Source: Boyd and Butler 1993, 45-46.⁴

⁴ Ibid.

Table 2. Scores, attributes, and value range used to establish an area's "naturalness".

| Scores | Attributes | Value range |
|--------------------------------------|---|--|
| PRIMARY CHARACTERISTICS | | |
| Presence of community | | |
| <u>Score</u> | <u>Community type</u> | <u>Population size</u> |
| 5 | Absence of permanent settlement | 0 |
| 3 | Unincorporated communities | 1–1,000 |
| 2 | Small towns | 1,001–10,000 |
| 1 | Urban settlements (industrial based) | >10,000 |
| Resource-related activity (forestry) | | |
| <u>Score</u> | <u>Resource type</u> | <u>Percent of area</u> |
| 5 | No presence of forestry activities | 100 % |
| 3 | Forestry Practices* I(cutover area) | <20 % cutover, 30–40 yrs |
| 2 | Forestry Practices II | >20 % cutover, 20–30 yrs |
| 1 | Forestry Practices III | >20 % cutover, 10–20 yrs |
| Resource-related activity (mining) | | |
| <u>Score</u> | <u>Resource type</u> | <u>Measure</u> |
| 5 | No presence of mining | 100 % |
| 3 | Mining Practices* I | Abandoned mines present |
| 1 | Mining Practices II | Operational mines present |
| Vegetation coverage | | |
| <u>Score</u> | <u>Vegetation Type</u> | <u>Percent of area</u> |
| 5 | Mixed forest (Type 1) | > 50 % coniferous, >10 % white pine and red pine |
| 4 | Mixed forest (Type 2) | > 50 % deciduous/coniferous, > 10 % white pine or red pine |
| 3 | Dense coniferous forest | > 80 % jack pine, black spruce |
| 2 | Sparse coniferous forest burns and cutover, i.e., all others except | > 80 % deciduous, > 10 years old |
| 1 | Poorly vegetated areas, clear-cuts, burns | shrub cover, < 10 years old |
| Access characteristics | | |
| <u>Score</u> | <u>Type</u> | <u>Value range</u> |
| 5 | Access Area* I | Areas outside of any buffers around all roads |
| 3 | Access Area II | Areas within 2 km buffer around logging roads |
| 2 | Access Area III | Areas within 5 km buffer around loose surface roads |
| 1 | Access Area IV | Areas within 10 km buffer around paved roads |
| Wildlife settings | | |
| <u>Score</u> | <u>Type</u> | <u>Value range</u> |
| 5 | Wildlife Setting* I | ARDA Class Areas** 1–2 |
| 3 | Wildlife Setting II | ARDA Class Areas 3–5 |
| 1 | Wildlife Setting III | ARDA Class Areas 6–7 |
| SECONDARY CHARACTERISTICS | | |
| Landscape (relief) | | |
| <u>Score</u> | <u>Characteristic</u> | <u>Measure</u> |
| 5 | High relative relief | > 25 meters |
| 3 | Medium relative relief | 10–25 meters |
| 1 | Little relative relief | Less than 10 meters |
| Landscape (water) | | |
| <u>Score</u> | <u>Characteristic</u> | <u>Percent of area</u> |
| 5 | Presence of water | 5–20 % |
| 3 | Presence of water | 20–50 % |
| 1 | Presence of water | 0–5% or < 50 % |

Source: Boyd and Butler 1994.⁵

* These represent varying degrees of "naturalness".

** Land capability inventory produced under the Agricultural and Rehabilitation Development Act (ARDA) in the 1960's. The smaller the number the better the capability. Maps were produced for wildlife based on waterfowl and ungulate capability. Others included maps showing recreational capability, agriculture (the principal focus of the inventory), and forestry.

⁵ Boyd, S. W.; Butler, R. W. 1993. Geographical information systems: A tool for establishing parameters for ecotourism criteria. Nat. Resour. Can., Canadian Forest Service–Ontario, Sault Ste. Marie, ON. Unpublished File Report No. 6. 39 p

scores for each attribute, a description of the various elements of each attribute, and a measure to determine the score. It should be noted that not all attributes have a range from 5 to 1. The absence of one or more units is used to illustrate the relative importance of a feature being absent or present, and to distinguish between aspects that are favorable to ecotourism and those that are not. An area's type and degree of naturalness will be determined by the cumulative score it receives for all of the attributes/biophysical characteristics present. The following scores are suggested for various types of naturalness.

| Type of naturalness | Score range anticipated/accepted |
|---------------------|----------------------------------|
| I | 31–35 |
| II | 21–30 |
| III | 15–20 |
| IV | 8–14 |
| V | 1–7 |

A veto system is employed in classifying areas. A Type I area is not possible if a score of 3 is recorded for two or more attributes present within the area. Type II landscapes require that no more than two attributes/characteristics have a score less than three; at least one attribute must score a 5. A Type III landscape is not possible if a score of lower than 2 is recorded for three or more attributes. A Type IV is not possible if an area scores a 1 for more than three attributes.

The third stage of the methodology arranges the naturalness attributes in a hierarchical order, with vegetation cover representing the base layer. Separate overlays of the remaining attributes are added to this base layer in a sequence so as to generate areas where a mix of attributes suitable to ecotourism are present. The following order is suggested: resource-related activities, access, communities, wildlife, and landscape. If, when using this sequence, too few areas are found, the order of the thematic layers may be rearranged. Areas that receive Type I or II classifications, which include components of cultural heritage, could then be considered as the best locations for ecotourism. The next best option areas would be those classed as Type III landscapes, and having some evidence of cultural features. It is also important that identified areas meet the minimum size required for ecotourism. An area between 300 and 500 square kilometers is considered suitable. This would allow for several days of travel and provide for a diversity of flora and fauna. In regions where few areas of this size are identified, smaller sites may be considered suitable for ecotourism opportunities/experiences provided that these are offered as day excursions or with the added attraction of an overnight stay.

CONCLUSIONS AND IMPLICATIONS

This paper has described a methodology to identify ecotourism sites within northern Ontario. The nature of the methodology is such that, given the availability of GIS technology, it can be applied in other similar settings. Being able to identify potential areas by matching the characteristics of a site with those attributes most appropriate for

ecotourism has major implications for tourism operators and recreation planners. As mentioned earlier, ecotourism by its very nature will have an impact on any environment. Limiting ecotourism to those areas where the landscape characteristics are most suited to and can best withstand such use will, to an extent, reduce detrimental impacts.

It should, however, be pointed out that a GIS is not a decision-making tool but rather provides information in a form from which decisions can be more easily made. If areas that have high potential for ecotourism are to be developed, cooperation and consultation between agencies, communities, and industry will be required. This will facilitate decisions that are based on the interests of the various groups involved and that are in line with the characteristics of the area itself. The methodology described in this paper identifies those areas that show the greatest potential for development through fostering cooperative partnerships.

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